

WHAT IS CLAIMED IS:

1. A passive infrared (IR) motion sensor, comprising:
at least a first IR detector outputting a first signal having a first frequency
when a moving object passes in a detection volume of the first detector;

5 at least a second IR detector outputting a second signal having a second
frequency when the moving object passes in a detection volume of the second
detector, the second frequency being different than the first; and

a processing system receiving the first and second signals and at least partially
based on the first and second signals, outputting a detection signal representative of
10 the moving object, wherein the detectors have the same size as each other, the first
detector being provided with a first optics defining a first focal length and the second
detector being provided with a second optics defining a second focal length different
than the first focal length.

2. The sensor of Claim 1, wherein the first and second detectors are housed
15 separately from each other and the first detector monitors a first volume of space that is at
least partially optically superposed with a second volume of space monitored by the second
detector.

3. The sensor of Claim 1, wherein each detector has two and only two respective
elements with the elements being of equal size with each other and with the spacing between
20 the elements of the first detector being the same as the spacing between the elements of the
second detector.

4. A method for discriminating a moving object in a monitored space from a non-
moving object characterized by non-constant radiation, comprising:
receiving a first frequency from a first passive IR detector;

receiving a second frequency from a second passive IR detector, the first and second frequencies not being equal, the detectors being of equal size and configuration but having respective optics of different focal lengths; and

outputting a signal indicating the presence of the moving object only if both the first and second frequencies are substantially simultaneously received, and otherwise not outputting the signal indicating the presence of the moving object.

5 5. The method of Claim 4, comprising arranging the detectors in respective separate housings.

10 6. The method of Claim 4, comprising optically superposing a first volume of space monitored by the first detector with a second volume of space monitored by the second detector.

15 7. The method of Claim 4, wherein each detector has two and only two respective elements with the elements being of equal size with each other and with the spacing between the elements of the first detector being the same as the spacing between the elements of the second detector.

8. A motion sensor, comprising:

at least a first passive IR detector having two and only two elements defining a first spacing therebetween, the first passive IR detector monitoring a first subvolume of space;

20 at least a second passive IR detector having two and only two elements defining a second spacing therebetween, the second spacing being equal to the first spacing and all four elements having the same size as each other, the second passive IR detector monitoring a second subvolume of space; and

an optics system at least partially optically superposing the first and second subvolumes, the optics system defining a first focal length associated with the first detector and a second focal length associated with the second detector, the first and second focal lengths not being equal to each other.

- 5 9. The sensor of Claim 8, further comprising a processor receiving signals from the detectors.